Persistent drought conditions, increased water use, and anthropogenic modifications of water resources have made wetlands in the southwest vulnerable to a changing climate. Spring-fed waterbodies in mountain recharge zones, such as Las Huertas in the Sandia Mountains, New Mexico, rely on snowmelt and monsoonal input for recharge and often have intermittent groundwater inputs along flow paths. Las Huertas provides water for the surrounding community and is the primary water source for acequias and irrigation for Placitas, New Mexico. Regional climate change models predict decreased snowpack; therefore, increased observation of wetlands, such as Las Huertas, is a management priority for Cibola National Forest. The Las Huertas watershed is in an arid land region, with springs emerging with CO$_2$-rich waters at a high elevation, actively precipitating travertine in some reaches but not others, which may be indicative of variable fluid inputs and geochemistry along the flow path. Presently, connections between surface water and groundwater and the karst aquifer (Madera Limestone) are poorly understood. Methods include major ion chemistry analysis and stable isotope analysis. Geochemical mixing models are used to identify end members and quantitatively determine the relative contributions of annual recharge and older groundwaters.

Stable isotope data indicate that both winter and summer monsoonal precipitation contribute to the regional aquifer recharging these springs. Field observations suggest that travertine precipitation is more active in the watershed's upper reaches, which may indicate the stream's equilibration with lower atmospheric CO$_2$. Spring waters classify as dominantly calcium bicarbonate, with some Na-Cl.

Salinity varies from less than 200 ppm to over 1000 ppm, and individual springs show limited interannual/seasonal variation. Las Huertas and Capulin Springs, headwater springs at high elevation, are the most saline springs observed. This study will fill critical gaps in understanding the flow contributions to Las Huertas Creek, one of the few perennial streams in the Sandia Mountains. Our work will help identify flow contributions to the water source, with implications for its resilience for anticipated changes from climate change.